These observations suggest that earlier conclusions relating to angles of rotation of porphyroblasts and the relationships between rotation axes and structures within the enclosing rock are probably incorrect.

The problem of the mechanism of rotation during growth of 'syn-tectonic' porphyroblasts has been the subject of debate and various mechanisms have been proposed. These include rotation of the growing crystal (Mügge, 1930; Schmidt, 1918; Spry, 1963), and rotation of the matrix around a growing but static crystal by 'flattening' (Ramsay, 1962). Consideration of these and other possible mechanisms involving essentially simple shear or simultaneous rotation of both crystal and matrix or both is not the concern of this communication but such mechanisms are at present being assessed in the light of the new work.

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A point-counting computer programme for petrofabric analysis of uniaxial mineral orientations

THIS programme will handle simultaneously the orientations of any number of uniaxial mineral grains (up to the limit of the computer store) observed in any number of thin sections cut in any number of different orientations. The orientations of the optic axes of the grains (lower hemisphere extremities) with respect to the plane of each thin section are given in the form of readings on universal stage axes A_1, A_2, A_4. The orientation of each thin section is defined in terms of three field observations: its strike, its dip, and the azimuth of its normal.

The field and universal stage observations for each section are related by a single angle read on universal stage axis A_1.

Each set of universal stage readings is progressively converted as follows: first, into spherical polar coordinates with respect to the plane and pole of the thin section and to the zero of the universal stage axis A_1; second, into spherical polar coordinates with respect to the horizontal plane, the nadir, and the cardinal directions; third, into planar polar coordinates with respect to the Schmidt (equal area) net; and fourth, into Cartesian coordinates in the plane of the Schmidt net. After suitable sorting of the points in terms of their Cartesian coordinates, the entire plot is scanned at N–S. and E–W. intervals of $\frac{1}{40}$ of the diameter of the circular plot (equivalent to 0·5 cm intervals with a 20-cm diameter Schmidt net).

The output, a series of numbers in their correct relative positions, gives the percentage of points per 1 % of the total area of the plot around each scanning centre. It is, of course, a lower hemisphere equal-area projection on the horizontal plane and has the four cardinal directions imprinted around the margin. Within the limits of the character- and line-spacing of the printing device, it is reasonably near to circular. Contouring can be rapidly carried out by hand or, if a digital plotter is available, the output procedure could be readily modified to take advantage of this.

The programme is written in Elliott 803 Algol 60 and is available from the author on 5-hole tape or in typescript. On the Elliott 803, computing time is of the order of 10 to 15 min depending on the number of points handled, but on a more modern fast computer, this would probably be reduced to something of the order of 1 min.

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Wulfenite from Ysbyty Ystwyth, Cardiganshire

ALTHOUGH rare in the British Isles, wulfenite attracts attention by being easy to recognize even in minute crystals and by containing the uncommon metal molybdenum. Some ten localities are known in England and Scotland, but there seem to be no records from Wales or